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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,139	03/03/2006	Piet Vanneste	Q-93454	3291

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EXAMINER	
ZUCKER, PAUL A	

ART UNIT	PAPER NUMBER
1621	

MAIL DATE	DELIVERY MODE
08/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,139	VANNESTE ET AL.	
	Examiner	Art Unit	
	Paul A. Zucker	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-53* is/are pending in the application.

4a) Of the above claim(s) *Claims 26-29 37-39 and 54-57* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *25,30-36 and 40-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) *25-53* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/3/06,5/28/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 25, 30-36 and 40-53 in the reply filed on 27 May 2008 is acknowledged. The traversal is on the ground(s) that the process of forming the polymer incorporates the process of forming the monomer. This is not found persuasive because the process of forming the monomer is not novel, as demonstrated below, and cannot, therefore, represent the special technical feature required for unity of invention. The requirement is still deemed proper and is therefore made **FINAL**. Claims 26-29, 37-39 and 54-57 are held withdrawn from consideration as being drawn to a non-elected invention.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. The disclosure is objected to because of the following informalities: A section heading Brief Description of the Several Views of the Drawing(s) is required: See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 25, 30-36 and 40-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 25 recites the limitations "X" and "RX" in lines 6 and 10, respectively. The possible identities for the variable "X", however, are not forth. It is therefore impossible to determine the metes-and-bounds of Applicants' claimed invention. Claim 25 and its dependents are therefore rendered indefinite.
5. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
>
> 1. Determining the scope and contents of the prior art.
> 2. Ascertaining the differences between the prior art and the claims at issue.
> 3. Resolving the level of ordinary skill in the pertinent art.
> 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 25, 30-36 and 40-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crass et al (US 2003/0191264 10-2003) when considered with Riondel et al (US 2003/0100679-A1 05-2003) and Kikuchi et al (JP 10-158,224-A 06-1998, machine translation).

Instantly claimed is process for the manufacture of a (meth)acrylate di-ammonium salt of formula (I).NOTE: the definition of the alkyl groups as "comprising" 1-4 carbon atoms is considered by the Examiner to allow for any arbitrary number of carbon atoms in the alkyl groups.

Crass teaches (Paragraphs [0048] and [0049]) a process for the transesterification of methyl methacrylate with didecylaminoethanol in the presence of a lithium catalyst at elevated temperature. The temperature of reaction is understood to be a result-effective variable subject to routine optimization Crass teaches (Paragraphs [0053] and [0054]) the quaternization of the transesterification product (polar aprotic) with an a large excess of methyl chloride or dimethyl sulfate in quaternization yields of 95 and 97% of quaternized product, respectively . The quaternized product, as a salt,

is presumably solid. Crass teaches (Paragraph [0048]) the mechanical separation of methyl chloride by evaporation (mechanical means), the recycling of which is prima facie obvious on an industrial scale.

The difference between the process taught by Crass and that instantly claimed is that Crass does not suggest that his process be applied to the manufacture of the quaternary ester derived from a methacrylate having two tertiary amino groups.

Riondel, however, teaches (Paragraph [0048]) a process for the quaternization of the ester derived from the transesterification of methyl acrylate with 1, 3-bis-dimethylamino-2-propanol. The process (*ibid*) taught by Riondel is conducted in methylene chloride as solvent, the concentration of which is recognized to be a result-effective variable in a bimolecular reaction.

Thus it would have been obvious to modify the process taught by Crass to produce the product produced by Riondel with a reasonable expectation of success due to the essential similarity of the chemistry involved in the two processes.

Kikuchi teaches (Paragraphs [0016]-[0019]) a process similar to that taught by Crass which, however, employs an aprotic polar solvent in the form of acetone or N-methylpyrrolidone and produces a pure, crystalline product. The diverse nature of these solvents is considered by the Examiner to be a suggestion that polar aprotic solvents including acetonitrile would be good substitutes for the acetone or N-methylpyrrolidone of Kikuchi and that therefore there would be reasonable

expectation for success in such substitution. Taken in combination with the teaching of Riondel, Kikuchi teaches to vary the reaction solvent.

Thus the instantly claimed process would have been obvious to one of ordinary skill the art.

Conclusion

7. Claims 25 – 57 are pending. Claims 25, 30-36 and 40-53 are rejected Claims 26-29, 37-39 and 54-57 are held withdrawn from consideration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul A. Zucker/
Primary Examiner, Art Unit 1621